AMENDMENTS
In the Claims

Current Status of Claims

1.(**currently amended**) A method of improving coronary calcium imaging-based cardiac risk assessment ~~implemented in a computer~~ comprising:

a. scanning a region of interest in a patient using computed tomography (CT);

b. storing CT generated data resulting from said scanning, the data comprising calcification data as CT generated images;

c~~a~~. analyzing the CT generated images to determine a location, heterogeneity, shape, size, texture, and density gradient of each calcified spot in a patient's heart;

d~~b~~. analyzing the CT generated images to determine a scatterness and a pattern of the multiple calcified spots;

e~~c~~. defining a risk score based on the analyzing step ~~a~~ c and/or the analyzing step ~~b~~ d; and

f~~d~~. assessing ~~the~~ a patient's risk of cardiovascular disease based upon ~~said analyzing~~ the risk score.

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35.(**currently amended**) The method of claim 1, further comprising

ge. categorizing an area of an abrupt change in regional coronary elasticity as a high-risk region.

36.(**previously presented**) The method of claim 1, wherein each location comprises a distance from a base or apex of the patient's heart and proximal or distal segment of coronary arteries.

37.(**previously presented**) The method of claim 1, wherein each heterogeneity comprises variance in calcium densities with its spot.

38.(**previously presented**) The method of claim 1, wherein each shape comprises a circular or angular spot having concentric or eccentric character.

39.(**previously presented**) The method of claim 1, wherein each texture comprises a smooth or rough texture.

40.(**previously presented**) The method of claim 1, wherein each density gradient comprises a higher density core or a higher density outer ring.

41.(**previously presented**) The method of claim 1, wherein the scatterness comprise interspot distance and the pattern comprises variance of calcium densities among two or more spots.

42.(**previously presented**) The methods of claim 1, wherein the CT generated images are generated by electron beam computed tomography (EBCT) or multi-detector spiral CT (MDCT).

42.(**previously presented**) The methods of claim 1, wherein the analyzing steps utilizes statistical determinants including mean, median, mode, standard deviation, range, coefficient of variation, skew, or kurtosis, or a combination thereof.

43.(**currently amended**) A method for improving coronary calcium imaging-based cardiac risk assessment~~, implemented in a computer~~ comprising:

a. scanning a region of interest in a patient using computed tomography (CT) at a first time;

b. storing first CT generated data resulting from the first scanning, the data comprising calcification data as first CT generated images;

c. later scanning a region of interest in a patient using computed tomography (CT) at at least one later time;

d. storing later CT generated data resulting from the later scanning, the data comprising calcification data as later CT generated images;

ca. analyzing the two or more sets of CT generated images of a patient obtained at the two or more times ~~points~~ to determine changes in a location, a heterogeneity, a shape, a size, a texture, and a density gradient of each calcified spot in the patient's heart;

fb. analyzing the two or more sets of CT generated images of the patient obtained at the two or more time points to determine changes in a scatterness and a pattern of multiple calcified spots;

gc. defining a risk score based the analyzing step ~~a~~c and/or the analyzing step ~~b~~f; and

hd. assessing ~~the~~ a patient's risk of cardiovascular disease based upon ~~said analyzing~~ the risk score.

44.(**previously presented**) The method of claim 43, further comprising

e. using the changes in calcification density, heterogeneity, shape, size, texture, and density gradient to assess the patient's risk of cardiovascular disease by relating the changes in calcified spots to an outcome of a lesion.

46.(**previously presented**) The methods of claim 43, wherein the analyzing steps utilizes statistical determinants including mean, median, mode, standard deviation, range, coefficient of variation, skew, or kurtosis, or a combination thereof.

47.(**previously presented**) The method of claim 43, wherein each location comprises a distance from a base or apex of the patient's heart and proximal or distal segment of coronary arteries.

48.(**previously presented**) The method of claim 43, wherein each heterogeneity comprises variance in calcium densities with its spot.

49.(**previously presented**) The method of claim 43, wherein each shape comprises a circular or angular spot having concentric or eccentric character.

50.(**previously presented**) The method of claim 43, wherein each texture comprises a smooth or rough texture.

51.(**previously presented**) The method of claim 43, wherein each density gradient comprises a higher density core or a higher density outer ring.

52.(**previously presented**) The method of claim 43, wherein the scatterness comprise interspot distance and the pattern comprises variance of calcium densities among two or more spots.

53.(**previously presented**) A method of mapping comprising:

forming a map of a plurality of sections of coronary vessels as a function of the statistical distribution of heterogeneity, shape, size, texture, and density gradient of calcified spots in each sections, where the map is used to determine a progression of plaque and to categorize a patient's risk of cardiovascular disease.